Appendix V

Glossary of Commonly Used Epidemiologic Terms

Following is a list and definitions of commonly used epidemiologic terms.[1] Note: the numbers given in the examples are for illustrative purposes only.

AIDS: Acquired Immunodeficiency Syndrome, the condition caused by HIV (Human Immunodeficiency Virus) infection. In order to be classified as an AIDS case, an individual must be infected with HIV and have at least one of the AIDS-indicator conditions. The Centers for Disease Control and Prevention (CDC) created an AIDS case definition in 1983 for the purpose of statistical monitoring. This definition was revised in 1985, 1987 and again in 1993 as additional scientific information came to be known about HIV infection. A diagnosis of AIDS usually requires:

1. A CD4+ T-lymphocyte count under 200 cells/uL (or less than 14% of total lymphocytes) AND laboratory evidence of HIV infection;

   OR

2. Presence of an AIDS-defining indicator disease and the absence of another reason for immune impairment.

Antiretroviral drugs: Refers to drugs or agents that affect the capability of retroviruses such as HIV to reproduce, prescribed for the treatment of retroviral infections such as HIV infection. The three common groups of antiretroviral agents for the treatment of HIV are: protease inhibitors, nucleoside analogs, and non-nucleoside reverse transcriptase inhibitors.

Case: An instance of a disease that matches the criteria set by a health authority for inclusion in the official disease count.

Case Definition: The criteria defining a disease or condition. You must be aware that these definitions change and that the change may alter the data collected and the interpretations (for example, the change in the AIDS case definition in 1993).

Co-morbidity: The occurrence of more than one illness, disease, or infection at the same time (e.g. AIDS and Tuberculosis).

Counseling & Testing: In the context of HIV/AIDS surveillance, ‘Testing’ refers to testing of an individual for HIV infection. This service is generally accompanied by patient ‘Counseling’ before and after the test regarding the test, test results, interpretation of the test and other related issues. The Massachusetts Department of Public Health AIDS Bureau sponsors numerous Counseling and Testing programs which have services available in **"Anonymous"** (the client is

not identified or known to the counselor) as well as **"Confidential"** (the client is known to the counselor) settings.

Count/Number: An amount of something (1600 Alive AIDS cases in Boston in 1999).

Cumulative Incidence: The risk of developing a particular disease over a specified period of time.

Demographic: Ways to describe people (race, ethnicity, sex, age)

Epidemic: An increase above the usual or expected rate of occurrence of particular events in a population.

Epidemiology: The study of the distribution and determinants of health-related events or disease in specified populations.

Exposure: Contact with or possession of a characteristic that is suspected to influence the risk of developing a particular disease.

Geographic: The place where something happens (city, county, health service region)

HAART: (Highly Active Anti-Retroviral Therapy): Combination of antiretroviral drugs that suppress HIV to unmeasurable or near unmeasurable levels.

HIV: Human Immunodeficiency Virus, the virus that causes **AIDS** (Acquired Immunodeficiency Syndrome.

Immunosuppression or immune deficiency: A state of the body where the immune system defenses do not function normally, thus making a person susceptible to diseases that they would not ordinarily develop; this can be the result of illness or the administration of certain drugs.

Incidence: The number of *new* cases of a specific disease in a certain place during a certain time period. This information is now available for HIV infections in MA for the years of 1999 and 2000.

Incidence Rate: The rapidity with which new cases of a particular disease occur within a given population.

Mode of Exposure: Derived from risk behavior, but not the same. A risk behavior is something a person does that may bring them into contact with HIV and lead them to become infected. People often engage in more than one kind of risk behavior. The mode of exposure indicates which risk behavior had the highest probability of being the route of infection. However, these

probabilities are based on the likelihood of transmission given a single instance of the risk behavior. Any occurrence of the behavior since 1978 counts. How *often* or how *recently* people have put themselves at risk is not taken into account. Some modes of exposure, such as *birth to an infected mother* and *transfusion* are not risk behaviors on the part of the infected individuals.

- **MSM (Male to Male Sex)**: Includes men who report sexual contact with other men, and men who report sexual contact with both men and women.
- **IDU (Injection Drug User)**: Cases in persons who are primary injection drug users.
- **MSM/IDU**: Cases in men who are both injection drug users and report sexual contact with other men.
- **Heterosexual Sex**: Cases in persons who report specific heterosexual contact with a person with, or at increased risk for, HIV infection (e.g. an injection drug user). The sub-categories for this mode of transmission are listed below.
  - ***Heterosexual Sex w/ an Injection Drug User***: Cases in persons whose specific heterosexual risk is heterosexual contact with an injection drug user.
  - ***Heterosexual Sex w/ a person w/ HIV infection or AIDS***: Cases in persons whose specific heterosexual risk is heterosexual contact with a person who is living with HIV infection or AIDS.
  - ***Heterosexual Sex w/Bisexual male***: Cases in persons whose specific heterosexual risk is heterosexual contact with a bisexual male.
  - ***Other Heterosexual Sex***: Includes all other sub-categories of risk, such as heterosexual contact with a person infected through a blood transfusion.
- **Presumed Heterosexual**: Cases in persons who report heterosexual sex, but do not report any knowledge of specific risk in their sex partners. Presumed Heterosexual is an exposure mode category used by the Massachusetts HIV/AIDS Surveillance Program. Conversely, the Centers for Disease Control and Prevention (CDC) categorizes these cases as No Identified Risk.
- **Blood / Blood Products**: Cases in persons infected by blood or tissue, such as a blood transfusion or a transplant from an infected donor.
- **Pediatric**: Infection before the age of 13, including mother to child transmission and blood transfusions to children. In cases of vertical (mother to child) transmission, the maternal risk factors are broken down as follows:
  - ***Injection Drug User (IDU)***: Cases in which the infected child's mother is/was a primary injection drug user.
  - ***Sex with IDU***: Cases in which the infected child's mother has had sexual contact with an injection drug user.
  - ***Sex/Male/HIV/AIDS***: Cases in which the infected child's mother has had sexual contact with a man who engages in male to male sex, or a person who is living with HIV infection or AIDS.
  - ***Transfusion***: Cases in which the infected child's mother was at risk for infection with HIV due to a blood transfusion.

    - ***No Identified Risk***: Cases in which the infected child's mother has no reported history of exposure to HIV through any of the other exposure categories.
- **Occupational**: Cases in persons who were exposed to HIV through occupational risk, such as a needle stick injury.
- **No Identified Risk**: Cases in persons with no reported history of exposure to HIV through any of the listed exposure categories.

Morbidity: The occurrence of an illness, disease, or injury.

Mortality Rate: The rate with which persons within a given population die from a particular disease.

Opportunistic Infections: Those diseases which are caused by organisms that are commonly present in our bodies or environment but cause disease only when one or more components of the immune system becomes suppressed.

People Living with AIDS: Includes all people known to be alive as of a specific date who have been diagnosed with HIV infection and who have ever been diagnosed with AIDS, regardless of their current clinical status. Additionally, only people who have been reported to the Massachusetts Department of Public Health HIV/AIDS Surveillance Program are included in counts.

People Living with HIV: Includes all people known to be alive as of a specific date who have been diagnosed with HIV infection and who have not developed AIDS. Additionally, only people who have been reported to the Massachusetts Department of Public Health HIV/AIDS Surveillance Program are included in counts.

Percent Increase or Decrease: The rate of change between one time period and another earlier time period. For example, if 60 AIDS cases were diagnosed in 1992 and 80 were diagnosed in 1995, the calculation looks like this: 80 – 60 = 20; 20 ÷ 60 = 0.33; 0.33 X 100 = 33%. Therefore, the number of cases increased 33% from 1992 to 1995. Here's another example: 50 syphilis cases were reported in 1992, but only 10 were reported in 1995. The calculation looks like this:

10 - 50 = -40; -40 / 50 = -.80; -.80 X 100= -80%

Therefore, the number of cases decreased 80% from 1992 to 1995. Note that you can have large percentage increases but you can never have a decrease of over 100%.

Percentage Point Change: Example: Yesterday, Jane got 34% of the pie. Today Jane got 35% of the pie. The percentage point change was +1%. (Note that this is different than percent increase or decrease which was 3%.) The percentage point change indicates how much bigger or smaller Jane's *share* of the pie was today compared to yesterday. Note that the example does not say

how big the pie was yesterday *or* today. So, unless the actual size of the pie is provided (for example, the pie was a 3-inch pie yesterday but a 9-inch pie today), it cannot be determined if Jane got more or less pie today, only that she got a bigger share of it.

Perinatal (vertical) Transmission: Generally refers to the transmission of a characteristic or condition from a mother to the child during pregnancy or during childbirth. HIV infection can be transmitted perinatally from an HIV-infected mother to her child.

Prevalence: The proportion of people in a given population who have a particular disease or condition at a particular time. Prevalence can be thought of as a snapshot of all existing cases at a specified time.

Prevalence Rate: The total number of all individuals who have a disease at a particular time divided by the population at risk of having the disease at that point in time.

Proportion, percentage: A share of something. (For example, 20 of 25 cases [80%] reported in 1995 were male). To calculate a proportion/percentage, the size of the total must be known. Also the following principle is key: Joe, Mary, and John share a pie today and a pie tomorrow. If Mary gets a bigger share tomorrow than she did today, and the pie is the same size, then *someone else* (either Joe or John or both of them) is going to get a smaller share tomorrow.

Rate: How often something happens in relation to the population it happens in per unit of time (100 AIDS cases per 100,000 males in Boston in 1995). In order to use rates effectively, you must keep in mind the size of numerator and denominator. The *kind* of data used is also important. For example, in Counseling and Testing data, positivity rates are calculated like this: 25 positives in the group divided by 100 valid tests in the group times 1,000 (25/100 X 1,000 = 250 per 1,000 tests). In this case the Counseling and Testing system provides its own denominators: *valid test*s. If those tested are representative of the general population, then you might make generalizations to a broader population. We do not think Counseling and Testing data are representative of the general population. Nonetheless, Counseling and Testing data are extremely relevant to HIV prevention efforts in that they often capture people likely to be at increased risk. In other instances a rate may be calculated from data that do *not* provide their own denominators. For example, AIDS case rates are calculated like this: 25 AIDS cases in the group divided by the *estimated general population* of 400,000 in the group times 100,000 (25/400,000 X 100,000 = 6.3 per 100,000 estimated general population). The hidden assumption here is that AIDS case reporting is fairly complete and that it *does represent* AIDS cases in the general population, that it is “population level” data.

Reporting Delay: How much time goes by between the date a person is diagnosed with a disease and the date that person's disease is reported to the health authority.

Risk Behavior: This is a behavior which increases the chance of contact with the infectious agent (HIV). These include all behaviors in which the exchange of body fluids occurs. For more discussion of HIV risk behaviors, read the Mode of Exposure entry above.

Sample: A subset of a population that is chosen for investigation.

Serosurveillance: Refers to a specialized tool of disease surveillance where data for a disease is collected through the results of tests conducted on blood samples drawn from a selected population.

Seroprevalence: The number of existing cases of a disease identified from antibody tests on blood serum taken from limited populations. The populations tested are limited but the information reflects actual rates, rather than estimates for this limited population.

Variable: A population characteristic that can be measured in various categories.

Year of Diagnosis: This is the year that the diagnosis is made. For AIDS cases, it is the year that the first AIDS-defining conditions occur.

Year of AIDS Diagnosis: The year in which the AIDS diagnosis was made. The statistics released from the Massachusetts AIDS Surveillance Program analyzes AIDS cases by the year of AIDS diagnoses, not the year in which a report is received.

Year of AIDS Report: The year in which an AIDS case is reported to the HIV/AIDS Surveillance Program. The US Centers for Disease Control and Prevention analyzes AIDS cases by the year of report.

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[1] *Many of the terms and definitions on this list were adapted with permission from the Texas Department of Public Health.*

Appendix VI

Commonly Used Acronyms

The following is a list of acronyms used throughout the Epi Profile.

AI/AN	American Indian / Alaska Native
API	Asian / Pacific Islander
AIDS	Acquired Immunodeficiency Syndrome
Black NH	Black Non-Hispanic
BRFSS	Behavioral Risk Factor Surveillance System
BSAS	Bureau of Substance Abuse Services
C&T	Counseling & Testing
HAB	HIV/AIDS Bureau
HIV	Human Immunodeficiency Virus
HTSX	Heterosexual Sex
IDU	Injection Drug Use
(M) DPH	(Massachusetts) Department of Public Health
MSM	Male Sex with Male
Pres. HTSX	Presumed Heterosexual Sex
White NH	White Non-Hispanic
UNK	Unknown